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10/521,906	01/20/2005	Ludo Jean Maria Mathilde Van Schepdael	903-123 PCT/US	1676
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HOFFMANN & BARON, LLP 6900 JERICHO TURNPIKE SYOSSET, NY 11791			EXAMINER WALDBAUM, SAMUEL A	
			ART UNIT	PAPER NUMBER
			1792	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/521,906

**Applicant(s)**VAN SCHEPDAEL, LUDO JEAN  
MARIA MATHILDE**Examiner**

SAMUEL A. WALDBAUM

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 17-26, 29 and 31-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-26, 29 and 31-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 January 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                 | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Amendment***

1. In the reply filed July 29, 2008 the applicant has amended claims 17 and 29, added claims 33-34, cancelled claims 28 and 30. The previous rejection is hereby withdrawn in favor of the new rejection found below.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the subject matter of claims 33 and 34 (the elongation of the bonding frame) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

3. Claim 33 and 34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim language states that the "bounding frame elongates in said axial direction to compensate for said slid of said lid when the pressure vessel is under high pressure" and the applicant is claim support [0008] of the specification. The specification states that the "elongation of the bounding frame is in axial direction can be compensated for by a corresponding axial movement of the lid". These are not the same, the claim states that frame elongates to compensate for the movement of the lid, but the specification states that the lid moves to compensate the elongation of the bounding frame. These are two different concepts thus this is new matter.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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*Claims 17-26, 29, 31 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujikawa et al (U.S. 6,491,518, hereafter `518) in view of Ishii (U.S. 4,471,949, hereafter `949) and Van Den Berg et al (U.S. 6,491,882, hereafter `882) and Propp et al (U.S. 6,652,654, hereafter `654) and Stucker (U.S. 5,772,783, hereafter `783) and Uehara et al (U.S. 6,712,081, hereafter `081).*

6. Claims 17, 18, 22, 24, 28, 31 and 33: `518 teaches the batch processing of substrates in high pressure (col. 1, lines 20-50 and col. 13, lines 1-65), `518 teaches the use of a cylindrical pressure chamber with a aperture (col. 13, lines 1-67). `518 teaches the use of a yoke pressing means for restraining the lids (fig. 5, part 6, col. 6, lines 55-65). `518 does not teach the use of a piping system through the lid and does not teach the necessary lid for the chamber and does not clearly teach the restraining means in a axial direction. `949 is a high pressure chamber. `949 teaches a chamber with two apertures and two lids (fig. 1, col. 2 lines 45-69) where a piping system (fig. 1, part 5) pass through a lid (fig. 1, parts 3 and 4) which extends along the axial direction into the chamber (fig. 1, shows that the lids extend in the cylindrical chamber, part 2) with the use of a sealing ring (fig. 1 parts 6 and 7) where the lids axial slide along the inner wall to full seal (col. 2, lines 45-69). All of the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention, meaning that the pressure chamber taught by `949 in apparatus `518 to process the substrates under high pressure.

`518 and `949 do not teach a restrain means. `949 teaches that press mechanism can help seal the pressure chamber (col. 2, lines 45-69). `882 is a high pressure chamber. `882 teaches

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the use of a retaining means, the bounding frame (fig. 1, part 4 and the half circle piece at the top and bottom that fits in the arch) where the chamber is movable in and out of the restraining means (col. 3, lines 15-65) to reinforce and hold the pressure chamber together (col. Lines 15-65). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have taken the restraining means as taught by '882 in apparatus '518 in view of '949 to reinforce and hold the pressure chamber together.

'882 teaches that the chamber is slidable (col. 3 lines 15-65) not the restraining means. All of the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention, meaning that the sliding mechanism for the chamber as taught by '882 can be used on the restraining means allowing it to slide over the pressure chamber.

Claims directed to apparatus must be distinguished from prior art in terms of structure rather than function. *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA). “[A]pparatus claims cover what a device is not what a device does” *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). '518, '949 and '882 do not teach that a supercritical fluid is used to create the high pressure. '654 is a substrate processing apparatus. '654 teaches that the substrate can be processed in a high pressure vessel with the use of a supercritical fluid (col. 1, lines 60-67 and col. 2, lines 1-15). '654 teaches that it is known to use a supercritical fluid to process a substrate, therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made that '518

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in view of '949 and '882 is capable of using a supercritical fluid as taught by '654 to have created the high pressure to process the substrate,

'518, '949, '882, '654 do not teach that the chamber is used for textiles and that the supercritical fluid is CO<sub>2</sub>. '783 is a method/apparatus for processing textiles with supercritical CO<sub>2</sub>. '783 teaches that it is well known in the art to use supercritical CO<sub>2</sub> in a high pressure vessel to treat textiles/fabric and delicate electronic components/wafers (col. 1, lines 10-25) to clean the items (col. 1, lines 10-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used supercritical CO<sub>2</sub> as taught '783 to clean the textile/wafer in apparatus '518 in view of '949, '882 and '654 to have clean the items within the high pressure chamber.

'518, '949, '882, '654 and '783 are silent about the elongation of the bounding frame to compensate for the movement of the lid. '081 is a high pressure vessel using supercritical fluid. '081 teaches that the restraining means elongates and compensates for movement of the lid during high pressure processing (col. 17, line 30-col. 18, line 67). It would have been obvious to one of ordinary skill in the art at the time the invention was made restraining means is capable of being elongated as taught by '081 in apparatus '518 in view of '949, '882, '654 and '783 to have compensated for movement of the lid when pressure builds up in the vessel.

7. Claim 19: '882 teaches that a lid has a holding part (fig. 2, chamber is part 3, and the lid is part 5, where the holder is the part sticking out from the lid)

8. Claim 20: '882 shows that the bounding frame on piece (fig. 1) composed of straight elements on the side (fig. 1) and arch element at one end (fig. 1) and a flat element with an arch inner shape at the other end (fig. 1). It would have been an obvious matter of design choice to

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have made the flat element arch shaped to correspond to the inner arch shape that it currently has, since such a modification would have involved a mere change in the shape of a component. A change of shape is generally recognized as being within the ordinary level of skill in the art. *In re Dailey*, 357 F.2<sup>nd</sup> 669, 149 USPQ 1966.

`882 discloses the claim invention except for the bounding frame is one piece instead of multiple parts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the bounding frame in multiple parts, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *In re Dulberg*, 289 F2d 522, 5223 129 USPQ 348, 349 (CCPA 1961).

9. Claim 21: `882 teaches two substantially cylindrical restraining pieces (fig. 1, the two half circle pieces right adjacent to the inner arch to the end pieces).

10. Claim 23: `518 teaches that the piping extends outs from the chamber (fig. 15) and `949 teaches that the piping extends from the lid (fig. 1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have put a groove or slot in the bounding frame taught by `882 in apparatus `518 in view of `949 so that that the pressure exerted on the pipe from the restrain means to hold the pressure chamber together does not crush or damage the pipe.

11. Claims 25 and 26: `882 teaches that the vessel can be made out of a glass fiber embedded in a plastic (col. 2, lines 1-25).

12. Claim 29: `513 in view of `949 and `882 as seen in above rejected claim teaches the claim apparatus. The apparatus would operate under ordinary condition where the substrate is put in the chamber, the lid is placed on the chamber, the restraining means (bounding frame) is



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slide to surround the vessel, the processing fluid is added for a certain time and after the completion of the cycle the restraining means is moved away where the lid is then removed and the substrate are removed.

13. Claims 30 and 32: '513 teaches placing them in batch (col. 1, lines 20-50 and col. 13, lines 1-65) which means more than one substrate is placed in the pressure vessel.

14. Claim 34: See claims 17-20 and 29-32 above.

### ***Response to Arguments***

15. Applicant's arguments filed July 29, 2008 have been fully considered but they are not persuasive.

16. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

17. The applicant is arguing that the materials to construct the apparatus cited in the prior art would not work and that it fails to teach using supercritical CO<sub>2</sub>. First off the cited art is capable of using supercritical CO<sub>2</sub>, see above cited reference that teach using supercritical CO<sub>2</sub> to clean the wafer/textiles. It is also within the skill level of one ordinary skilled in the art to chose a material for constructing the high pressure vessel that will not interact with the supercritical fluid. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Furthermore applicant has provided no evidence that

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the materials would not be appropriate for supercritical CO<sub>2</sub>, only argumentative statements which carry no weight.

18. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

19. Applicant is also arguing that the cited art does not teach that the lid with the sealing means is closed by sliding in the axial direction. The cited art, especially '949 teaches a sealing means on the lid that slides in the axial direction when closed, see above citations.

20. The applicant is arguing that the prior art does not teach elongation of the bounding frame, however this argument is moot in light of the newly cited art '081.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAMUEL A. WALDBAUM whose telephone number is (571)270-1860. The examiner can normally be reached on M-TR 6:20-3:50, F 6:30-10:30 est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. A. W./

Examiner, Art Unit 1792

/FRANKIE L. STINSON/

Primary Examiner, Art Unit 1792